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(74) 代理人: 田澤博昭, 外(TAZAWA, Hiroaki et al.); 〒100-0013 東京都千代田区霞が関三丁目7番1号 大東ビル7階 Tokyo (JP).

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日本語

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(71) 出願人(米国を除く全ての指定国について): 株式会社 山武 (KABUSHIKI KAISHA YAMATAKE) [JP/JP]; 〒150-0002 東京都渋谷区渋谷2丁目12番19号 Tokyo (JP).

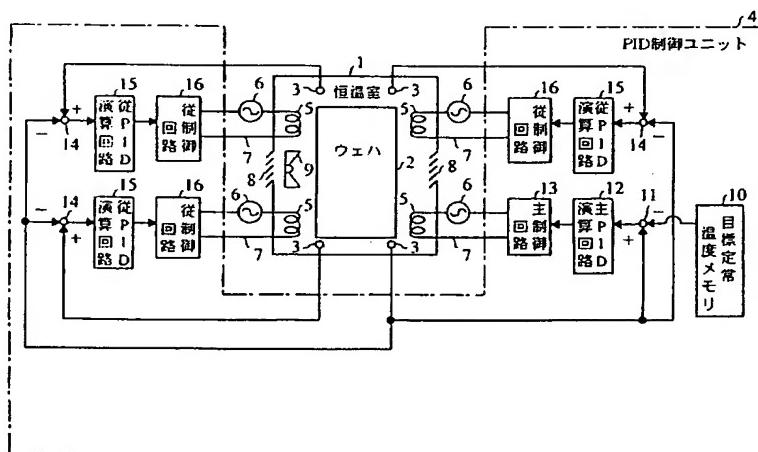
2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイドスノート」を参照。

(72) 発明者: および

(75) 発明者/出願人(米国についてのみ): 平山博文 (HI-RAYAMA, Hirofumi) [JP/JP]; 〒150-0002 東京都渋谷区渋谷2丁目12番19号 株式会社 山武内 Tokyo (JP).

(54) Title: CONTROL SYSTEM AND CONTROLLER

(54) 発明の名称: 制御システムおよび制御装置



- 1...THERMOSTATIC CHAMBER
2...WAFER
4...PID CONTROL UNIT
10...DESIRED STEADY TEMPERATURE MEMORY
12...MAIN PID OPERATING CIRCUIT
13...MAIN CONTROL CIRCUIT
15...SUB-PID OPERATING CIRCUIT
16...SUBCONTROL CIRCUIT

(57) Abstract: A control system and a controller for controlling the wafer temperature suitably in the production process of a semiconductor device wherein overshoot or undershoot can be suppressed effectively after a desired steady temperature is reached by dividing the controlled system into a plurality of zones, controlling the zones separately, and making simultaneous the timings of reaching the desired steady temperatures by the primary control.

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(57) 要約:

制御対象を複数のゾーンに分けてゾーン毎に制御しつつ、本来の制御によって目標定常温度への到達タイミングを揃え、目標定常温度に到達した後におけるオーバーシュートやアンダーシュートの発生を効果的に抑制することができ、半導体素子を製造するプロセスにおいてウエハの温度を好適に制御することができる。

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/08240

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ G05B11/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ G05B11/32, G05B11/36, G05D23/19Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1926-1996 Jitsuyo Shinan Toroku Koho 1996-2001
Kokai Jitsuyo Shinan Koho 1971-2001 Toroku Jitsuyo Shinan Koho 1994-2001

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 09-311727 A (Mitsubishi Heavy Industries, Ltd.),	1,4
A	02 December, 1997 (02.12.97), Fig. 1 (Family: none)	2-3,5-16
X	JP 06-065901 U (Rika Kogyo K.K.),	6-7
A	16 September, 1994 (16.09.94), Fig. 5 (Family: none)	1-5,8-16
A	JP 07-200078 A (Komatsu Electronic Metals Co., Ltd.), 04 August, 1995 (04.08.95), Fig. 1 (Family: none)	8,16
A	JP 62-015603 A (Omron Tateishi Electronics Co.), 24 January, 1987 (24.01.87), Fig. 1 (Family: none)	1-16
A	JP 48-053180 A (Taniaka Keiki Kogyo K.K.), 26 July, 1973 (26.07.73), Fig. 3 (Family: none)	1-5

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier document but published on or after the international filing date
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"&"	document member of the same patent family

Date of the actual completion of the international search
18 December, 2001 (18.12.01)Date of mailing of the international search report
25 December, 2001 (25.12.01)Name and mailing address of the ISA/
Japanese Patent Office

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